



## **Statistics Report 20004, Barley, hulled**

Report Date: June 27, 2017 02:44 EDT

Nutrient values and weights are for edible portion.

Nutrient	Unit	Value Per 100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
<strong>Proximates</strong>													
Water	g	9.44	--	0.554	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Energy	kcal	354	--	--	--	--	--	--	--	--	Calculated or imputed	--	10/1989
Energy	kJ	1481	--	--	--	--	--	--	--	--	Calculated or imputed	--	06/2006
Protein	g	12.48	--	0.574	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Total lipid (fat)	g	2.30	--	0.253	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Ash	g	2.29	--	0.077	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Carbohydrate, by difference	g	73.48	--	--	--	--	--	--	--	--	Calculated or imputed	--	10/1989
Fiber, total dietary	g	17.3	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Sugars, total	g	0.80	--	--	--	--	--	--	--	--	Calculated or imputed	20130	09/2002

Minerals

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Calcium, Ca	mg	33	--	1.773	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Iron, Fe	mg	3.60	--	0.154	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Magnesium, Mg	mg	133	--	3.571	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Phosphorus, P	mg	264	--	24.799	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Potassium, K	mg	452	--	8.962	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Sodium, Na	mg	12	--	1.241	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Zinc, Zn	mg	2.77	--	0.081	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Copper, Cu	mg	0.498	--	0.021	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Manganese, Mn	mg	1.943	--	0.149	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Selenium, Se	µg	37.7	--	--	--	--	--	--	--	--	Calculated or imputed	20130	09/2002
<b>Vitamins</b>													
Vitamin C, total ascorbic acid	mg	0.0	--	--	--	--	--	--	--	--	Calculated or imputed	--	10/1989

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Thiamin	mg	0.646	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Riboflavin	mg	0.285	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Niacin	mg	4.604	--	--	--	--	--	--	--	--	Calculated or imputed	--	10/1989
Pantothenic acid	mg	0.282	--	--	--	--	--	--	--	--	Calculated or imputed	--	10/1989
Vitamin B-6	mg	0.318	--	0.038	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Folate, total	µg	19	--	1.847	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Folic acid	µg	0	--	--	--	--	--	--	--	--	Assumed zero	--	01/2001
Folate, food	µg	19	--	1.847	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Folate, DFE	µg	19	--	--	--	--	--	--	--	--	Calculated or imputed	--	06/2006
Vitamin B-12	µg	0.00	--	--	--	--	--	--	--	--	Assumed zero	--	10/1989
Vitamin B-12, added	µg	0.00	--	--	--	--	--	--	--	--	Assumed zero	--	09/2004
Vitamin A, RAE	µg	1	--	--	--	--	--	--	--	--	Calculated or imputed	--	09/2002
Retinol	µg	0	--	--	--	--	--	--	--	--	Assumed zero	--	06/2002
Carotene, beta	µg	13	--	--	--	--	--	--	--	--	Calculated or imputed	--	09/2002
Carotene, alpha	µg	0	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Cryptoxanthin, beta	µg	0	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
Vitamin A, IU	IU	22	--	--	--	--	--	--	--	--	Calculated or imputed	--	10/1989
Lycopene	µg	0	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
Lutein + zeaxanthin	µg	160	--	--	--	--	--	--	--	--	Calculated or imputed	20130	09/2002
Vitamin E (alpha-tocopherol)	mg	0.57	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Vitamin E, added	mg	0.00	--	--	--	--	--	--	--	--	Assumed zero	--	09/2004
Vitamin D (D2 + D3)	µg	0.0	--	--	--	--	--	--	--	--	Assumed zero	--	11/2008
Vitamin D	IU	0	--	--	--	--	--	--	--	--	Assumed zero	--	02/2009
Vitamin K (phylloquinone)	µg	2.2	--	--	--	--	--	--	--	--	Calculated or imputed	20130	09/2002
<b>Lipids</b>													
Fatty acids, total saturated	g	0.482	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
4:0	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
6:0	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
8:0	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
10:0	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
12:0	g	0.006	299	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
14:0	g	0.011	299	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
16:0	g	0.411	299	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
18:0	g	0.017	299	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Fatty acids, total monounsaturated	g	0.295	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
16:1 undifferentiated	g	0.006	299	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
18:1 undifferentiated	g	0.241	299	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
20:1	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
22:1 undifferentiated	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
Fatty acids, total polyunsaturated	g	1.108	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
18:2 undifferentiated	g	0.999	299	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
18:3 undifferentiated	g	0.110	299	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
18:4	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
20:4 undifferentiated	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
20:5 n-3 (EPA)	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
22:5 n-3 (DPA)	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
22:6 n-3 (DHA)	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
Cholesterol	mg	0	--	--	--	--	--	--	--	--	Assumed zero	--	10/1989
<b>Amino Acids</b>													
Tryptophan	g	0.208	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Threonine	g	0.424	60	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Isoleucine	g	0.456	60	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Leucine	g	0.848	60	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Lysine	g	0.465	65	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Methionine	g	0.240	61	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Cystine	g	0.276	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Phenylalanine	g	0.700	60	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Tyrosine	g	0.358	58	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Valine	g	0.612	60	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Arginine	g	0.625	60	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Histidine	g	0.281	60	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Alanine	g	0.486	58	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Aspartic acid	g	0.779	58	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Glutamic acid	g	3.261	58	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Glycine	g	0.452	58	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
Proline	g	1.484	58	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Serine	g	0.527	54	--	--	--	--	--	--	--	Analytical or derived from analytical	--	10/1989
<b>Other</b>													
Alcohol, ethyl	g	0.0	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
Caffeine	mg	0	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
Theobromine	mg	0	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
<b>Flavonoids</b>													
Flavan-3-ols													
(+)-Catechin <sup>5</sup>	mg	2.4	--	0.17	1.4	4.1	--	--	--	--	--	--	--
Proanthocyanidin													
Proanthocyanidin dimers <sup>1 2 3 4</sup>	mg	33.6	--	11.06	17.55	59	--	--	--	--	--	--	--
Proanthocyanidin trimers <sup>1 2 4</sup>	mg	30.6	--	12.95	14.6	67.1	--	--	--	--	--	--	--
Proanthocyanidin 4-6mers <sup>1</sup>	mg	27.2	--	--	27.2	27.2	--	--	--	--	--	--	--
Proanthocyanidin 7-10mers <sup>1</sup>	mg	0.0	--	--	0	0	--	--	--	--	--	--	--
Proanthocyanidin polymers (>10mers) <sup>1</sup>	mg	0.0	--	--	0	0	--	--	--	--	--	--	--

<sup>1</sup>Gu, L., Kelm, M.A., Hammerstone, J.F., Beecher, G., Holden, J., Haytowitz, D., Gebhardt, S., and Prior, R.L. Concentrations of proanthocyanidins in common foods and estimations of normal consumption, 2004 J. Nutr. 134 pp.613-617

<sup>2</sup>Jerumanis, J. Quantitative analysis of flavanoids in barley, hops, and beer by high-performance liquid chromatography (HPLC), 1985 J. Inst. Brew. 91 pp.250-252

<sup>3</sup>Madigan D. and McMurrough I. Determination of proanthocyanidins and catechins in beer and barley by high-performance liquid chromatography with dual-electrode electrochemical detection, 1994 Analyst 194 pp.863-868

<sup>4</sup>Zimmermann, B. and Galensa, R. One for all-all for one: proof of authenticity and tracing of foods with flavonoids. Analysis of proanthocyanidins in barley and malt, 2007 Eur Food Res Technol. 224 pp.385-393

<sup>5</sup>Holtekjølen, A. K., Kinitz, C., and Knutsen, S. H. Flavanol and bound phenolic acid contents in different barley varieties., 2006 J. Agric. Food Chem. 54 pp.2253-2260